

# PATENT COOPERATION TREATY

From the  
INTERNATIONAL SEARCHING AUTHORITY

To:

see form PCT/ISA/220

PCT

## WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY (PCT Rule 43bis.1)

Date of mailing  
(day/month/year) see form PCT/ISA/210 (second sheet)

### FOR FURTHER ACTION See paragraph 2 below

Applicant's or agent's file reference  
see form PCT/ISA/220

International application No.  
PCT/ZA2004/000080

International filing date (day/month/year)  
13.07.2004

Priority date (day/month/year)  
15.07.2003

International Patent Classification (IPC) or both national classification and IPC  
F42D1/055

Applicant

DETNET SOUTH AFRICA (PTY) LTD

#### 1. This opinion contains indications relating to the following items:

- Box No. I Basis of the opinion
- Box No. II Priority
- Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- Box No. IV Lack of unity of invention
- Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- Box No. VI Certain documents cited
- Box No. VII Certain defects in the international application
- Box No. VIII Certain observations on the international application

#### 2. FURTHER ACTION

If a demand for international preliminary examination is made, this opinion will usually be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA"). However, this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPCA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of three months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

#### 3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA:



European Patent Office  
D-80208 Munich  
Tel. +49 89 2399 - 0 Tx: 523656 epmu d  
Fax: +49 89 2399 - 4465

Authorized Officer

Ziegler, H-J

Telephone No. +49 89 2399-2894



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Box No. 1 Basis of the opinion

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1. With regard to the language, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.  
 This opinion has been established on the basis of a translation from the original language into the following language ., which is the language of a translation furnished for the purposes of international search (under Rules 12.3 and 23.1(b)).
2. With regard to any nucleotide and/or amino acid sequence disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:
  - a. type of material:  
 a sequence listing  
 table(s) related to the sequence listing
  - b. format of material:  
 in written format  
 in computer readable form
  - c. time of filing/furnishing:  
 contained in the international application as filed.  
 filed together with the international application in computer readable form.  
 furnished subsequently to this Authority for the purposes of search.
3.  In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
4. Additional comments:

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**Box No. II Priority**

1.  The following document has not been furnished:

copy of the earlier application whose priority has been claimed (Rule 43bis.1 and 66.7(a)).  
 translation of the earlier application whose priority has been claimed (Rule 43bis.1 and 66.7(b)).

Consequently it has not been possible to consider the validity of the priority claim. This opinion has nevertheless been established on the assumption that the relevant date is the claimed priority date.

2.  This opinion has been established as if no priority had been claimed due to the fact that the priority claim has been found invalid (Rules 43bis.1 and 64.1). Thus for the purposes of this opinion, the international filing date indicated above is considered to be the relevant date.

3.  It has not been possible to consider the validity of the priority claim because a copy of the priority document was not available to the ISA at the time that the search was conducted (Rule 17.1). This opinion has nevertheless been established on the assumption that the relevant date is the claimed priority date.

4. Additional observations, if necessary:

**Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or  
industrial applicability; citations and explanations supporting such statement**

1. Statement

Novelty (N)	Yes: Claims	3-5,7-11,13,15,16
	No: Claims	1,2,6,12,14,17
Inventive step (IS)	Yes: Claims	5,8-11,13,15,16
	No: Claims	3,4
Industrial applicability (IA)	Yes: Claims	1-17
	No: Claims	

2. Citations and explanations

see separate sheet

## 3 INDEPENDENT CLAIM 12

3.1 The present application does not meet the criteria of Article 33(1) PCT, because the subject-matter of claim 12 is not new in the sense of Article 33(2) PCT.

Claim 12 refers to a device with features, corresponding to the method defined in claim 1. D1 especially discloses the daisy chain connection of the detonators. Hence D1 also discloses the device of claims 12 and 17.

Since D1 discloses the reception of a delay time. Hence the subject matter of claim 14, which relates to limiting information as one of several alternatives is, known as well.

A direct addressing is not disclosed in D1. This method also appears to non obvious in view of the teaching of D1. Hence the subject matter of claims 15 and 16 satisfies the criteria of Article 33(3) PCT.

## 6 CLAIM 8

6.1 Document D1, which is considered to represent the most relevant state of the art, discloses

A method of programming a plurality of detonators in sequence which includes the steps of exchanging data between a first detonator and a control unit using a communications bus to which all of the detonators are connected, using the first detonator to enable a second detonator to be addressed by the control unit, exchanging data between the second detonator and the control unit using the communications bus.

From this, the subject-matter of independent claim 8 differs in that:

- all of the detonators are connected in parallel,
- the first detonator is disabled from being addressed by the control unit,

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- the second detonator is disabled from being addressed by the control unit.

6.1.1 The subject-matter of claim 8 is therefore novel (Article 33(2) PCT)

The problem to be solved by the present invention may be regarded as:

Preventing false programming of detonators.

6.1.2 The solution to this problem proposed in claim 8 of the present application is considered as involving an inventive step (Article 33(3) PCT) for the following reasons:

There is no teaching in the prior art which would lead to the claimed solution starting from D1.

The same solution is mentioned in claims 5 and 13.

6.1.3 Claims 9-11 are dependent on claim 8 and as such also meet the requirements of the PCT with respect to novelty and inventive step.

**Re Item V.**

- 1 The following documents are referred to in this communication:  
D1 : US 4 846 066 A (BEATTIE TIMOTHY A ET AL) 11 July 1989
- 2 INDEPENDENT CLAIM 1
- 2.1 The present application does not meet the criteria of Article 33(1) PCT, because the subject-matter of claim 1 is not new in the sense of Article 33(2) PCT.

D1 shows a method of programming a plurality of detonators (6) which are connected to a control unit (exploder 1) by a communication bus (bus wire 3), the method including the steps of using the control unit to address a first detonator to allow an exchange of data (col. 3, l. 26-33), on the communications bus, between the first detonator and the control unit and using the first detonator to enable a second detonator (col. 2, l. 45-53) to be addressed by the control unit to allow an exchange of data, on the communications bus, between the second detonator and the control unit (col. 2, l. 60-63).

The subject matter of claim 2 is not novel either because D1 includes the possibility of connecting more than two detonators in line.

D1 is silent about the structure of the signals received by the detonators. However an enabling signal as mentioned in claims 3 and 4 appears to be in the scope of general common knowledge of a skilled person. Hence the subject matter of these claims lacks an inventive step within the meaning of Article 33 (3) PCT).

The subject matter of claim 6 is known from D1 (col. 1, l. 50-53).

A direct addressing is not disclosed in D1. This method also appears to non obvious in view of the teaching of D1. Hence the subject matter of claim 7 satisfies the criteria of Article 33(3) PCT.